Evolution of crown gastropods: insight from mitochondrial gene order data

Mónica Medina[1,2], Yvonne Vallès[2], H. Matthew Fourcade[1], and Jeffrey Boore[1]
[1]DOE Joint Genome Institute, Walnut Creek CA, USA
[2]California Academy of Sciences, Golden Gate Park, San Francisco CA, USA
M_Medina@lbl.gov

Crown gastropods exhibit remarkable evolutionary trends such as convergent body plan evolution, as well as adaptations to new environments (e.g. freshwater and land). They also show interesting patterns of evolution at the molecular level. In the particular case of their mitochondrial DNA, and based on the few genomes available, heterobranch gastropods (i.e. hetrostrophan snails, land snails and sea slugs) are found to have small genomes compared to other invertebrate taxa. More importantly, they present major gene rearrangements that have occurred multiple times throughout the evolutionary history of this clade. We are obtaining complete mtDNA sequences from additional key taxa, which already show that rearrangements are rather common in this group. Having a detailed phylogenetic reconstruction of multiple genomes should help us identify when and how these rearrangements started taking place in gastropod evolution.